

Hosting the Olympics: a comparative study of developed and developing economies.

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1. Introduction

The Olympic Games, an event that embodies global unity and athletic excellence, have significant economic implications for host countries. Historically, hosting the Olympics has been perceived as a prestigious opportunity, promising increased international visibility, infrastructural development, and potential long-term economic benefits. However, the actual economic outcomes of hosting the Olympics can vary dramatically between developed and developing countries. The financial investment required to host the Games is substantial, often involving extensive infrastructural developments, security measures, and organizational expenses. For developed countries, with their robust economies and advanced infrastructure, these costs can be substantial but manageable. Conversely, for developing countries, the financial burden can be overwhelming, with expenses sometimes exceeding three times those of their developed counterparts. Such disparities not only highlight the economic strains on developing nations but also question the effectiveness and fairness of the current Olympic bidding and hosting process. Moreover, the potential economic benefits, such as increased tourism, job creation, and enhanced international reputation, are not uniformly realized across different economic contexts. The disparity in outcomes prompts a critical examination of the underlying factors that contribute to these differences. With the thorough examination of the case studies and economic data from both developed and developing countries, the aim of this research is to identify patterns and provide a nuanced understanding of the economic dynamics involved in hosting the Olympics. This research seeks to provide a comprehensive comparative analysis of the economic impacts of hosting the Olympics on developed and developing countries. By shedding light on the varying experiences and outcomes, it aims to inform policymakers, economists, and international bodies about the potential risks and rewards associated with hosting this global event.

2. Literature review

A substantial body of literature exists regarding the economic impacts of hosting the Olympics, particularly in terms of employment, GDP growth, tourism, infrastructure investment, and trade balance. These studies span both developed and developing countries, offering varied perspectives on the outcomes of such large-scale events. The following review summarizes key findings from recent research and reports on the economic consequences of hosting the Olympics in developed countries, specifically focusing on Japan, the UK, and France.

In a comprehensive study by Osada of the Bank of Japan (2016), the economic effects of the 2020 Tokyo Olympics were analyzed. The report highlights that the event stimulated economic activity through increased investment in infrastructure and tourism. Employment rates in sectors such as construction, hospitality, and retail saw significant boosts in the lead-up to and during the Games. This study aligns with the findings of Gerdtham and Ruhm (2002), which noted that economic activities often lead to temporary increases in employment and related economic benefits. However, the long-term impact on employment rates remained uncertain, as the study suggested potential post-Olympic declines once the initial economic stimulus subsided.

Research by Girma (2021) examined the broader economic impacts of the Tokyo Olympics on Japan's economy. Their findings indicated that while there were short-term boosts in GDP growth and employment, the long-term benefits were mixed. The study emphasized the importance of sustainable post-Olympic economic policies to maintain the positive momentum generated by the event.

The UK's experience with the 2012 London Olympics has also been extensively analyzed. A report by the UK Government (2014) provides evidence of significant economic

benefits resulting from the Games. The report highlights that the Olympics led to a substantial increase in tourism and service sector revenues, contributing to GDP growth. The employment rates in construction and service industries saw a marked increase due to the preparatory activities and the influx of tourists. However, the report also notes that these benefits were unevenly distributed across different regions and sectors, with some areas experiencing limited economic gains.

Thornton (2013) conducted a detailed impact study of the London 2012 Olympics, which corroborates the UK Government's findings. The study emphasizes the legacy benefits of the infrastructure investments made for the Olympics. These investments not only provided immediate economic boosts but also contributed to long-term urban development and regeneration. However, the study also highlights the significant costs associated with hosting the Games, questioning whether the economic benefits outweigh the financial expenditures in the long run.

Recent articles on the 2024 Paris Olympics also provide insights into the economic impacts of hosting the Games. Bloomberg (2024) discusses the cost-benefit considerations of the Paris Olympics, highlighting the significant investments required for infrastructure and security. The article raises concerns about the financial burden on taxpayers and the potential for cost overruns. Similarly, Forbes (2024) reports on the financial challenges faced by Air France, attributing a substantial loss to the disruptions and increased operational costs associated with the Olympics.

Baade and Matheson (2016) offer a broader economic analysis, discussing the varied economic impacts of hosting the Olympics across different contexts. Their research suggests that while developed countries can better absorb the financial risks associated with hosting

the Games, the economic benefits are often marginal and highly dependent on effective post-event utilization of infrastructure and sustained tourism growth.

Blake (2018) evaluated the subjective well-being of residents in London during the 2011-2013 period. His study finds that while hosting the Olympics increases the well-being of the host city's residents during the event, especially around the opening and closing ceremonies, there is little evidence of lasting legacy effects. The study also estimates residents' implicit willingness-to-pay for the event, concluding that the well-being impact did not justify the costs for London alone, though a modest well-being impact on the rest of the country could make hosting worthwhile.

The International Olympic Committee (IOC) (2023) examines past and predicted economic benefits of hosting the Olympics. It provides graphical representations of business growth, tourism benefits, and other economic impacts linked to the Olympic and Paralympic Games. This article supports the notion that while immediate economic boosts are common, long-term benefits require careful planning and management of post-event infrastructure and resources.

Ma (2022) investigated the financial outcomes of Olympic Games from Sydney 2000 to PyeongChang 2018. This comprehensive study evaluates the expenditure and revenue changes of the organizing committees and the investment of taxpayers' money for Olympic venues. The findings highlight significant cost overruns and varying revenue outcomes, emphasizing the financial risks associated with hosting the Olympics. This study provides a detailed analysis of cost management and the financial challenges faced by host cities.

The International Olympic Committee (IOC) provides an optimistic perspective on the legacy benefits of the London 2012 Olympics. The IOC highlights the long-term economic and social benefits derived from the infrastructure and urban regeneration projects

initiated for the Games. This includes the continued use of Olympic venues for sporting and community events, contributing to ongoing economic activity and social engagement in the host city.

Fonseca (2014) reports that Brazil unveiled a \$10 billion infrastructure budget for the Rio 2016 Olympics, aimed at upgrading transportation, sports venues, and public spaces. While these investments were intended to enhance urban mobility and economic activity in Rio, the high costs and concerns about the underutilization of these facilities post-Olympics raised questions about the long-term economic benefits.

Kasimati (2015) explores the economic impact of the Athens 2004 Olympics, offering a comparative perspective relevant to understanding the outcomes of the Rio 2016 Games. Kasimati's research indicates that while the Athens Games generated short-term economic benefits, including boosts in tourism and temporary employment, the long-term economic legacy was less positive. The high costs associated with constructing Olympic venues and infrastructure, combined with a lack of sustainable post-Olympic use, resulted in significant financial burdens. This study underscores the risks that developing countries like Brazil may face in hosting such large-scale events, particularly in managing costs and ensuring long-term economic sustainability.

Bao and Wang (2010) examine the economic legacy of the Beijing 2008 Olympics, providing insights into the long-term impacts of hosting the Games in a rapidly, but still developing country. The study emphasizes the importance of leveraging Olympic infrastructure for broader urban development. In the case of Beijing, the Olympics served as a catalyst for significant infrastructure investments that contributed to the city's modernization. However, the study also notes challenges, such as the underuse of certain Olympic venues and the high costs associated with maintaining these facilities.

Finally, the International Olympic Committee (IOC) (2020) assesses the economic legacy of the Rio 2016 Olympics, highlighting both the successes and challenges faced by Brazil post-Games. The IOC report underscores the importance of the investments made in transportation, sports facilities, and urban development. While these projects contributed to immediate economic activity and infrastructure improvements in Rio, the long-term impact has been mixed. The report notes that while some venues have been successfully repurposed and continue to generate economic value, others remain underutilized, reflecting the broader challenges of maintaining an economic legacy in a developing country context.

Overall, the literature reveals a complex and often mixed picture of the economic impacts of hosting the Olympics. While there are immediate economic benefits, particularly in terms of employment and GDP growth, the long-term impacts are less certain and highly dependent on effective post-Olympic economic strategies and the sustainable utilization of infrastructure investments. The comparative analysis of these studies underscores the importance of context-specific factors in determining the overall economic outcomes of hosting the Olympics.

3. Data

The economic impact of hosting the Olympics varies significantly between developed and developing countries. In this section, the differences in economic indicators such as infrastructure investment, unemployment rates, and tourism sector growth are explored, with the focus on both developed and developing countries. By comparing the experiences of nations like the UK, Japan, and France with those of Brazil, Greece, and China, this analysis aims to determine if the economic impact is more noticeable in smaller economies or if similar trends are observable across different contexts, along with the comparison between developed and developing economies.

3.1 Infrastructure Investment

In the UK, the infrastructure investment for the London 2012 Olympics amounted to £9.3 billion (approximately \$14.2 billion) (IOC, 2013). Japan invested ¥1.64 trillion (approximately \$15.4 billion) for the Tokyo 2020 Olympics, emphasizing the construction of new venues and refurbishing existing ones (IOC, 2022). France, for the upcoming Paris 2024 Olympics, has allocated €6.8 billion (approximately \$7.4 billion) towards infrastructure (Anja, 2024), so far the lowest amount among the countries represented in this research. In contrast, Brazil's investment in infrastructure for the Rio 2016 Olympics was approximately BRL 39.1 billion (approximately \$20 billion), focusing on urban mobility and sports venues (Fonseca, 2014). China, during the Beijing 2008 Olympics, invested CNY 280 billion (approximately \$42 billion) primarily on stadiums, transportation, and urban development (Bao & Wang, 2010). Greece, for the Athens 2004 Olympics, invested €13 billion (approximately \$15 billion), which included extensive infrastructure upgrades across the city (Kasimati, 2015). The data above is visually represented in **Figure 1**.

3.2 Tourism & Services sector revenue

In the UK, tourism revenue increased by 11% in the year following the London 2012 Olympics, contributing £2.1 billion (approximately \$3.2 billion) to the economy (WorldData, 2018). Japan, after the Tokyo 2020 Olympics, witnessed a surge in tourism with an estimated ¥1.2 trillion (approximately \$11.2 billion) boost to its tourism sector (Girma, 2021). France is expecting an increase of €4 billion (approximately \$4.3 billion) in tourism spending due to the Paris 2024 Olympics (Parkins, 2024). In Brazil, the Rio 2016 Olympics led to a 12% rise in tourism revenue, adding BRL 6.2 billion (approximately \$1.6 billion) to the economy (IOC, 2017). China saw a significant boost in tourism after the Beijing 2008 Olympics, with an increase of CNY 19.5 billion (approximately \$3 billion) in tourism revenue (Bao & Wang, 2010). Greece, however, experienced only a modest increase of €1.5 billion (approximately

\$1.8 billion) in tourism revenue post-Athens 2004 (Kasimati, 2015). This can be attributed to the fact that the Greek economy was already heavily reliant on tourism, meaning that the potential for exponential growth was limited.

3.3 Unemployment Rate

In the UK, the unemployment rate decreased from 7.9% in 2010 to 5.7% in 2013, post-London 2012 Olympics, driven by construction and service sector jobs (Office for National Statistics, 2024). Japan saw a slight reduction in unemployment from 5.1% in 2010 to 3.9% after the Tokyo 2020 Olympics, largely due to job creation in infrastructure and tourism sectors (Federal Reserve Bank, 2024). France's unemployment rate is expected to decline from 8.1% in 2021 to 7.2% in 2024, with a focus on construction and hospitality sectors for the Paris 2024 Olympics (EuroStat, 2024). In Brazil, the unemployment rate decreased from 11.5% in 2014 to 9.6% in 2017 following the Rio 2016 Olympics, mainly due to infrastructure projects (WorldBank, 2024). China's unemployment rate dropped from 4.2% in 2006 to 3.9% in 2009 after the Beijing 2008 Olympics, driven by extensive urban development and services (WorldBank, 2024). Greece saw a temporary decrease in unemployment from 11% in 2002 to 8.9% in 2006 post-Athens 2004, but dramatically spiked again to 20.9% in 2011 due to the subsequent financial crisis (WorldBank, 2024).

4. Results

4.1 Infrastructure Investment

It can be noticed that developed countries such as the UK, Japan, and France tend to allocate funds efficiently, focusing on long-term urban and transport improvements. However, their investments are often lower relative to GDP compared to developing countries. On the other hand, developing nations like Brazil, China, and Greece allocate a larger portion of their GDP towards infrastructure, often leading to higher overall

expenditures. This trend reflects the need for substantial urban development in these nations, but also raises concerns about post-Olympic economic burdens, particularly in smaller economies like Greece.

4.2 Tourism & Services Sector Revenue

The trends in tourism and services sector growth reveal that developed countries often experience a more substantial and sustained increase in tourism revenues post-Olympics. The boost in tourism is generally more prolonged and pronounced, with revenues continuing to grow for several years. For instance, **Figure 2** shows revenue growth from \$37 billion to \$56.7 billion in the United Kingdom after the 2012 Olympics. In contrast, developing countries, while also experiencing a tourism boost, often see a shorter-lived impact, with the gains diminishing more rapidly. **Figure 2** demonstrates that after the 2016 Olympics, Brazil's increase in revenue from \$4.5 billion to \$6 billion lasted for less than 10 years, and decreased to the lowest ever point of \$3 billion. Additionally, the initial spike in tourism revenues in smaller developing economies like Greece tends to be lower than in larger or more economically stable developing countries like China. As explained in the study by Baade and Matheson (2016), developing countries are usually already reliant on the tourism industry, which means the Olympics provide a smaller relative boost to this sector. In contrast, developed countries have a more diverse economy with less reliance on tourism, so the improvements and international exposure from the Olympics create a more significant relative increase in tourism.

4.3 Unemployment Rate

The analysis of unemployment rates indicates that hosting the Olympics generally leads to a temporary decrease in unemployment, especially in the construction and service sectors. This trend is observed across both developed and developing countries, although the

magnitude and sustainability of the decrease vary. Developed countries tend to experience a more moderate and sustained reduction in unemployment rates, while developing countries often see a more significant but short-lived drop. Large number of temporary jobs is created by the construction and services sectors leading up to and during the Olympics, but these jobs are often not sustainable, as they are directly tied to the event. Once the Olympics are over, the lack of diversified economic sectors and limited long-term planning means that many of these jobs disappear, leading to a spike in unemployment rates. This is particularly evident in countries like Greece, where economic instability post-Olympics negated initial employment gains. As seen on **Figure 3**, Greece's unemployment decrease from 11% to 7.6% did not last longer than 5 years and increased back to a shocking value of over 20%. Conversely, in developed countries, the infrastructure built for the Olympics is often integrated into long-term urban planning and economic development strategies. This way, London's Olympic infrastructure was designed to support ongoing housing, business, and recreational needs, which continued to generate employment after the games. Figure 3 shows that as United Kingdom's unemployment rate decreased from 8% to 4.9%, it never crossed the line of 5% again, sustaining between the values of 3.9% and 4.9%

4.4 Comparison Based on the Size of Economy

When comparing Greece and China, the scale and impact of infrastructure investment are markedly different due to the size of their economies. Greece, with a GDP of approximately \$242 billion in 2004, invested around €9 billion (\$11 billion), which accounted for about 4.5% of its GDP in the Athens Olympics. This significant investment strained Greece's finances, leading to considerable debt issues in the years following the Olympics. In contrast, China, with a GDP of about \$4.6 trillion in 2008, invested approximately CNY 280 billion (\$40 billion), representing less than 1% of its GDP. Although

this was a substantial sum, China's much larger economy was better able to absorb these costs, making the investment more sustainable. The UK, with a GDP of approximately \$2.7 trillion in 2012, allocated £9.3 billion (\$14.2 billion), about 0.5% of its GDP, for the London Olympics. This investment was effectively integrated into long-term urban planning, providing lasting benefits without exerting undue financial pressure. This comparison highlights that larger economies like China and the UK can manage Olympic-related costs more effectively, ensuring long-term benefits, while smaller economies like Greece may struggle with the financial burden due to the disproportionate scale of their investments.

In the tourism and services sector, the contrast between Greece and China further underscores the disparities rooted in economic scale and capacity. Greece, with a smaller and less diversified economy, saw only a modest increase of €1.5 billion (approximately \$1.8 billion) in tourism revenue following the Athens 2004 Olympics. This limited growth can be attributed to Greece's pre-existing reliance on seasonal tourism and a lack of sustained investment in marketing and infrastructure post-Olympics. In contrast, China experienced a significant boost of CNY 19.5 billion (approximately \$3 billion) in tourism revenue after the Beijing 2008 Olympics, which was not just a result of the Olympic spotlight but also due to China's expansive and rapidly modernizing infrastructure that was capable of accommodating a large influx of international visitors. Additionally, China's diversified economy and strategic efforts to position itself as a global tourism hub ensured that the benefits from the Olympics were more sustainable.

Overall, there are indeed differences between developed and developing countries in hosting the Olympics, even if they are not as explicit as some expect them to be. Developed countries, as seen in the example of the UK, Japan, and France, generally have the economic resilience to absorb the substantial investments required for hosting, leading to sustainable

infrastructure development, tourism growth, and long-term employment benefits. In contrast, developing countries, such as Brazil, Greece, and China examined previously, experience more mixed outcomes. Even if larger developing economies like China can leverage the Olympics for significant economic gains, smaller economies like Greece still face financial strain and struggle to maintain the benefits of hosting the Games. Thus, the scale of the economy plays a crucial role in determining whether hosting the Olympics will result in long-term economic benefits or exacerbate existing economic vulnerabilities.

5. Conclusion

In conclusion, the findings from this research, supported by data analysis and comparison across different countries, underscore that hosting the Olympics truly has a significant impact on a nation's economy. Even though the degrees may vary, both developed and developing nations experience economic benefits and challenges associated with the Games. Larger economies, like the United Kingdom, France, and Japan, tend to absorb the costs of hosting more effectively, with investments often leading to sustainable infrastructure improvements, tourism growth, and long-term economic gains. A great example can be the UK's approach to employment, which allowed it to not only decrease unemployment rate from 8% to 4.9%, but also never allow it to exceed the line of 5% again. In contrast, smaller or less economically strong countries, such as Greece or Brazil, may struggle with the financial burden, leading to mixed outcomes post-Olympics. In the case of Greece, for instance, the country's vulnerability to economic crises caused the unemployment rate to increase back to a shocking value of over 20%, despite previously decreasing. The differences in tourism revenue, infrastructure investment, and employment effects are particularly noticeable, reflecting the varying capacities of countries to effectively use the Olympics for sustained economic growth. The benefits in areas such as tourism and

employment can be on a larger scale, but they are often more enduring in developed nations, and developing countries may face challenges in maintaining these gains over the long term. Ultimately, the scale of a country's economy and GDP plays a crucial role in determining the overall success and legacy of hosting the Olympics. Larger economies tend to have better management of athletic infrastructure in the post-olympics period, while smaller economies can even have negative effects in case of maintenance expenses being too great for them. These findings highlight the need for careful planning during the bidding process and strategic investment to maximize potential benefits and mitigate risks brought by the biggest sporting celebration in the world.

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7. Appendix

Figure 1. Infrastructure Investment on Hosting the Olympic Games by Country

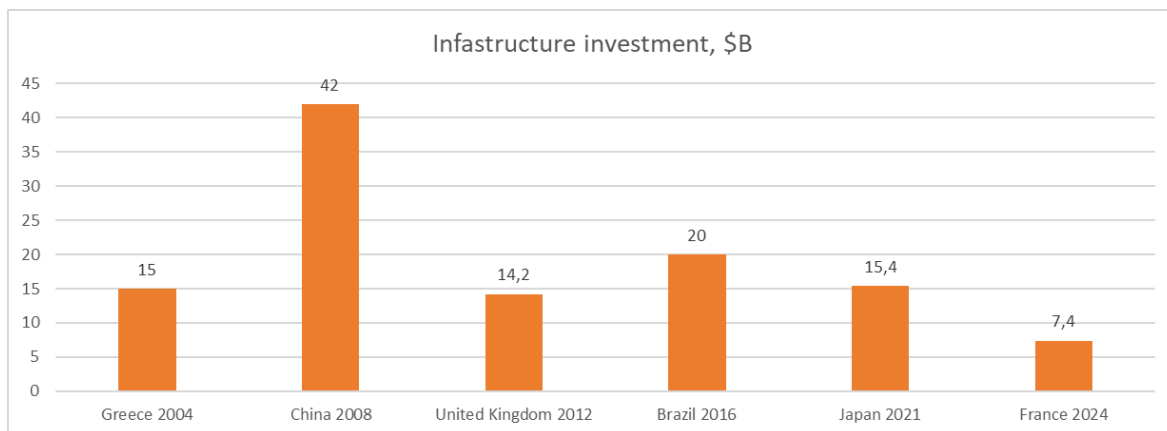


Figure 2. Unemployment Rate Before, During, and After Hosting the Olympic Games by country

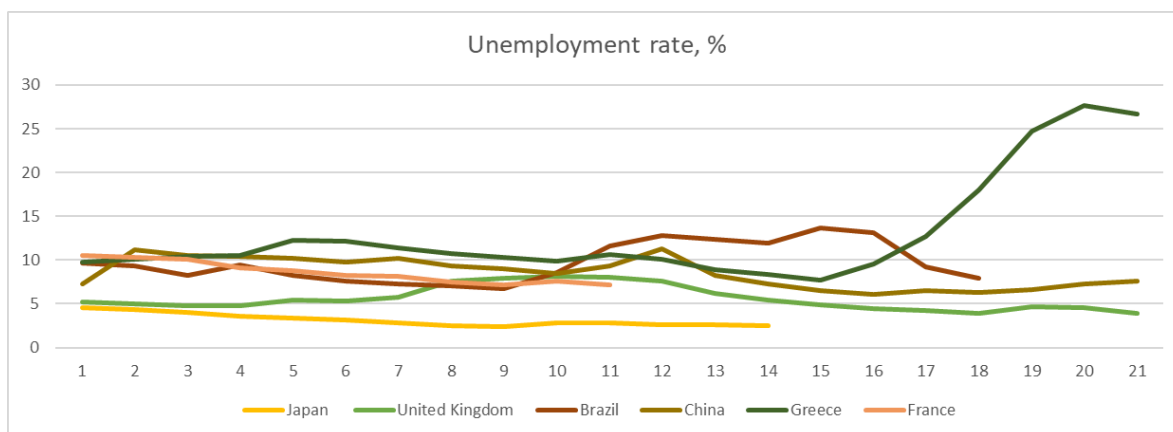


Figure 3. International Tourism Receipts Before, During, and After Hosting the Olympic Games by country

